

**§ 153.545**

**46 CFR Ch. I (10–1–14 Edition)**

(f) If the containment system is equipped with a cooling system, the cooling system must:

(1) Not compress the cargo; and

(2) Regulate the cargo temperature automatically and allow manual regulation.

(g) The cargo piping system must:

(1) Comply with Part 38 of this chapter;

(2) Be completely separate from all other systems;

(3) Be assembled from valves, fittings, and accessories having a pressure rating of not less than 1030 kPa gauge (approx. 150 psig) (American National Standards Institute); and

(4) Have no threaded joints.

(h) The cargo containment system vapor space and each space listed in paragraphs (k) and (l) of this section must have continuous monitoring of oxygen concentration or have an arrangement to enable sampling with a portable oxygen analyzer.

(i) Valve disks or disk faces, seats, and other wearing valve parts must be made of stainless steel containing no less than 11 percent chromium.

(j) The venting system must be independent of other containment or tank-ship systems.

(k) When a cargo tank is in an enclosed space, the space must have:

(1) An inert gas system meeting the requirements that apply to the inert gas system of a containment system in § 153.500, or

(2) A forced ventilation system meeting the requirements that apply to a cargo handling space ventilation system in § 153.312.

(l) Cofferdams, cargo tanks, double bottom spaces, void spaces and other enclosed spaces adjacent to an integral cargo tank must have an inert gas system meeting the requirements that apply to the inert gas system of a containment system in § 153.500.

(m) An intank pump or inert gas displacement must be used to discharge cargo.

(n) The cargo discharge piping system must have a remotely actuated quick closing shutoff valve that meets § 153.284 at the cargo transfer hose connection.

(o) Cargo hose must:

(1) Have the specific approval of the Commandant (CG-ENG) for use in alkylene oxide transfer; and

(2) Be marked “For Alkylene Oxide Transfer Only”.

(p) All exposed parts of the cargo containment system above or on the deck, such as tank domes, cargo piping, and loading manifolds, must be covered by a water spray system that:

(1) Operates automatically in a fire involving the cargo containment system;

(2) Has at least two remote manual actuators, one in each emergency shutdown station required by § 153.296; and

(3) Covers the area of application with a uniform spray of

0.175 l/m<sup>2</sup> sec (0.0043 gal/ft<sup>2</sup> sec).

[CGD 73–96, 42 FR 49027, Sept. 26, 1977, as amended by CGD 78–128, 47 FR 21210, May 17, 1982; CGD 82–063b, 48 FR 4782, Feb. 3, 1983; CGD 82–063b, 48 FR 39629, Sept. 1, 1983; CGD 81–078, 50 FR 21174, May 22, 1985; USCG–2014–0688, 79 FR 58284, Sept. 29, 2014]

**§ 153.545 Special requirements for liquid sulfur.**

(a) A containment system carrying liquid sulfur must have:

(1) A cargo tank ventilation system that:

(i) Maintains the H<sub>2</sub>S vapor concentration below 1.85 percent by volume; and

(ii) Prevents sulfur buildup within itself; and

(2) An alarm system designed to operate when the ventilation system blower fails.

(b) The void spaces around a cargo tank that carries liquid sulfur must be oil tight.

(c) A cargo tank that carries liquid sulfur and the void spaces surrounding the tank must have connections for sampling vapor.

**§ 153.554 Special requirements for acids.**

When Table 1 refers to this section:

(a) Each containment system loading and discharge connection must have a spray shield;

(b) Each cargo containment system must be separated from bunkers by double walls, such as a cofferdam and piping tunnels; and

(c) Each vessel must have on board a means to determine whether cargo has leaked into the spaces adjacent to a cargo containment system.

**§ 153.555 Special requirements for inorganic acids.**

When Table 1 refers to this section, a tankship's shell plating must not be a part of the cargo tank.

[CGD 78-128, 47 FR 21210, May 17, 1982]

**§ 153.556 Special requirements for sulfuric acid and oleum.**

(a) Except as prescribed in paragraphs (b) and (c) of this section, containment systems carrying sulfuric acid, oleum, or contaminated sulfuric acid are approved by the Commandant (CG-ENG) on a case by case basis.

(b) A containment system carrying sulfuric acid may be:

(1) Made of unlined steel if the cargo composition is between 70 and 80 or between 90 and 100 percent acid by weight;

(2) Lined with lead if the cargo composition does not exceed 96 percent acid by weight; or

(3) Lined with natural rubber or neoprene if the cargo composition does not exceed 51 percent acid by weight.

(c) A containment system for oleum may be of unlined steel if the concentration of free sulfur trioxide in the oleum exceeds 20 percent by weight.

[CGD 73-96, 42 FR 49027, Sept. 26, 1977, as amended by CGD 82-063b, 48 FR 4782, Feb. 3, 1983]

**§ 153.557 Special requirements for hydrochloric acid.**

(a) A containment system that carries hydrochloric acid must be lined with:

(1) Natural rubber;

(2) Neoprene; or

(3) A material approved for hydrochloric acid tanks by the Commandant (CG-ENG).

(b) Containment systems for contaminated hydrochloric acid are approved by the Commandant (CG-ENG) on a case by case basis.

[CGD 73-96, 42 FR 49027, Sept. 26, 1977, as amended by CGD 82-063b, 48 FR 4781, Feb. 3, 1983]

**§ 153.558 Special requirements for phosphoric acid.**

A phosphoric acid containment system must be:

(a) Lined with natural rubber or neoprene;

(b) Lined with a material approved for phosphoric acid tanks by the Commandant (CG-ENG); or

(c) Made of a stainless steel that resists corrosion by phosphoric acid.

NOTE: "Phosphoric acid", as defined in § 153.2, includes phosphoric acid, superphosphoric acid, and aqueous solutions of phosphoric acid.

[CGD 73-96, 42 FR 49027, Sept. 26, 1977, as amended by CGD 82-063b, 48 FR 4782, Feb. 3, 1983; CGD 88-100, 54 FR 40042, Sept. 29, 1989]

**§ 153.559 Special requirements for nitric acid (less than 70 percent).**

A containment system that carries nitric acid (less than 70 percent) must be of stainless steel that resists corrosion by nitric acid.

**§ 153.560 Special requirements for Alkyl (C7-C9) nitrates.**

(a) The carriage temperature of octyl nitrates must be maintained below 100 °C (212 °F) in order to prevent the occurrence of a self-sustaining exothermic decomposition reaction.

(b) Octyl nitrates may not be carried in a deck tank unless the tank has a combination of insulation and a water deluge system sufficient to maintain the tank's cargo temperature below 100 °C (212 °F) and the cargo temperature rise at below 1.5 °C(2.7 °F)/hour, for a fire of 650 °C (1200 °F).

[CGD 88-100, 54 FR 40042, Sept. 29, 1989, as amended by CGD 92-100, 59 FR 17028, Apr. 11, 1994; CGD 94-900, 59 FR 45139, Aug. 31, 1994]

**§ 153.565 Special requirement for temperature sensors.**

If a cargo listed in table 1 of this part refers to this section, temperature sensors must be used to monitor the cargo pump temperature to detect overheating due to pump failures, when carrying that cargo.

[CGD 94-900, 59 FR 45139, Aug. 31, 1994]